

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A computer-implemented method for quantitative estimation of the reliability of a technical system, comprising the steps of:
 - specifying the types of faults with associated fault rates for the system components;
 - determining a probability distribution of a random variable characterizing the reliability for the overall system and for a prescribable time interval;
 - determining first fault rates by statistical random samples of the associated fault rates of the system components;
 - estimating second fault rates by subjective expert opinion and an upper and a lower estimate being specified for each of the second fault rates;
 - calculating a first limiting probability distribution with the upper estimates and second limiting probability distribution with the lower estimates; and
 - using the first and second fault rates and the first limiting probability distribution and second limiting probability distribution to determine an upper and lower limit of the system reliability.

2. (Previously Presented) The method as claimed in claim 1, wherein
 - (a) a mean value is additionally estimated in each case for the second fault rates, and

(b) a mean probability distribution is calculated with the mean values.

3. (Currently Amended) The method as claimed in Claim 1, wherein

(a) random sample mean values are determined for the first fault rates and distribution functions are assumed, and

(b) a width or a widening of the associated distribution function is determined from the uncertainty of each random sample mean value.

4. (Previously Presented) The method as claimed in claim 3, wherein

a) for each of said first fault rates, a Poisson distribution with a nominal expectation value equal to the random sample mean value is assumed,

b) a minimum and a maximum expectation value are calculated from a required confidence level, and

c) a widened Poisson distribution is calculated by weighted summing of the Poisson distributions with the nominal, minimum and maximum expectation values.

5. (Currently Amended) The method as claimed in claim 4, wherein

a confidence level $1-\alpha$ and weighting factors $1-2\alpha$, α and α are selected for the Poisson distributions with the nominal, minimum and maximum expectation values.

6. (Previously Presented) The method as claimed in claim 1, wherein third fault rates are taken into account and known a priori or with high statistical reliability, and for which a Poisson distribution is assumed.

7. (Previously Presented) The method as claimed in claim 6, wherein distribution functions of the first and third fault rates are convoluted, and the first and second limiting probability distributions and a mean probability distribution are calculated by adding the upper, lower and a mean estimate of the second fault rates.

8. (Currently Amended) The method as claimed in claim 1, wherein the random variable characterizing the reliability is based on at least one of a susceptibility to faults, a downtime, costs of standstill, repair and maintenance, or variables derived therefrom.

9. (Previously Presented) The method in accordance with claim 6 in conjunction with FMEA tables, FMECA tables or tables derived from said FMEA tables or FMECA tables, wherein

- a) said first, second and third fault rates are distinguished in the FMEA or FMECA tables, or the tables derived therefrom,
- b) random sample mean values and confidence intervals are specified for said first fault rates,
- c) upper, lower and mean estimates are specified for said second fault rates, and
- d) expectation values are specified for said third fault rates.

10. (Currently Amended) The method as claimed in claim 9, wherein

—— a) —— Poisson distributions of the first and third types of fault are calculated and convoluted with one another, and

—— b) —— the second fault rates are grouped into upper, lower and mean fault rates and added separately in each case.

11. (Previously Presented) The method of claim 2, wherein the mean value is the most probable value.

12. (Previously Presented) The method of claim 5, wherein $\alpha=0.1$ is set.

13. (Previously Presented) The method of claim 7, wherein other non-random variables relevant to the system reliability are determined for the prescribable time interval and added to the first and second probability distributions.

14[[],]. (Currently Amended) The method of claim 8, wherein the first and second fault rates are failure rates.